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10/711,403	09/16/2004	Alfred Albert Mancini	13DV-13098-3	5402
30952	7590	01/18/2006	EXAMINER	
HARTMAN AND HARTMAN, P.C. 552 EAST 700 NORTH VAIPARAISO, IN 46383			AUSTIN, AARON	
			ART UNIT	PAPER NUMBER
			1775	

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Please find below and/or attached an Office communication concerning this application or proceeding.

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities: the recitation of "formed of" occurs twice on page 12, [Para 33] [0028].

Appropriate correction is required.

Claim Objections

The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims 12-18 have been renumbered 11-17.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422

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F.2d 438, 164 USPQ 619 (CCPA 1970); and In re Thorington, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1, 2, 5, 7, and 8 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,808,816. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant claims are encompassed by the claims of the patent. Specifically, both claim a hydrocarbon fluid containment article comprising a wall with a first surface wetted by a hydrocarbon fluid and a second surface as well as a coating system comprising an outermost layer of platinum and a ceramic barrier layer between the outermost layer and the wall. They differ in that the coating system is on the second surface in the claimed invention but on the first surface in the patented invention. However, it would have been obvious to apply the coating to either surface as the claimed invention and the patented invention are both used in like manner to insulate against and reflect radiant energy.

Regarding claims 2 and 5, both the claimed invention and the patented invention claim the outermost layer having a thickness in the range of 150 to about 200 nm and the hydrocarbon fluid at a temperature in the range of 105°C to about 345°C.

Regarding claims 7 and 8, both the claimed invention and the patented invention refer to an article commonly including a gas turbine component chosen from the group

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consisting of fuel/air heat exchangers, pipes, fuel nozzles and oil sumps (see the specification of the patented invention for the definition of "article").

Claim 3 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 2 of U.S. Patent No. 6,808,816. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant claims are encompassed by the claims of the patent. Specifically, both claim a hydrocarbon fluid containment article as discussed above. Further, both the claimed invention and the patented invention claim the barrier layer having a thickness in the range of about 500 to about 1500 nm.

Claim 4 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 3 of U.S. Patent No. 6,808,816. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant claims are encompassed by the claims of the patent. Specifically, both claim a hydrocarbon fluid containment article as discussed above. Further, both the claimed invention and the patented invention claim the barrier layer is formed of at least on ceramic material chosen from the group consisting of silica, alumina, tantala, hafnia, yttria, and chemical combinations of silica with boron and/or phosphorous and/or alumina.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5 and 7-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Nagaraj et al. (U.S. Patent No. 5,545,437).

Nagaraj et al. teach a heat shield for articles such as gas turbine components including nozzle inserts wherein the shield is able to effectively reflect a majority of thermal radiation incident to the shield (column 1, lines 55-61). The heat shield is applied to a substrate subjected to thermal radiation while at an elevated service temperature and comprises a barrier layer on the substrate and a reflective layer on the barrier layer (column 2, lines 12-20). The barrier layer is preferably an oxide (e.g., alumina or yttria-stabilized zirconia) or a nitride having a thickness of up to about 25 micrometers (column 2, lines 29-40; column 4, lines 21-24; column 4, line 32). The reflective layer is a reflective material such as a noble metal (e.g., platinum) having a thickness of up to 10 micrometers.

The instant claims refer to a hydrocarbon fluid containment article for a gas turbine engine component such as a fuel/air heat exchanger, pipe, fuel nozzle, or oil sump. The article comprises a wall having a first surface wetted by a hydrocarbon fluid and an oppositely-disposed second surface exposed to an environment at a temperature higher than the hydrocarbon fluid. The second surface includes a coating

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system comprising an outermost layer of platinum and a ceramic barrier layer between the outermost layer and the wall such that the outermost layer is exposed to the environment reflecting radiant energy into the environment. The outermost layer has a thickness of about 150 to about 200 nm. The barrier layer has a thickness of about 500 to about 1500 nm and is formed of at least one ceramic material chosen from the group consisting of silica, alumina, tantala, hafnia, yttria, and chemical combinations of silica with boron and/or phosphorous and/or alumina. Applicant further claims the hydrocarbon fluid is at a temperature of about 105°C to about 345°C. Nagaraj et al. use like materials in a like manner and it would therefore be expected that one surface for a component such as a nozzle insert will be wetted by a hydrocarbon fluid falling within this temperature range. Therefore Applicant's claims are anticipated by Nagaraj et al.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6 and 9-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagaraj et al. (U.S. Patent No. 5,545,437) in view of Priceman (EP 0304176 A2).

Nagaraj et al. teach a heat shield for articles such as gas turbine components including nozzle inserts wherein the shield is able to effectively reflect a majority of thermal radiation incident to the shield as discussed above.

Nagaraj et al. do not teach a second coating system on the first surface of the substrate wherein the second coating comprises an outermost layer of platinum and a ceramic barrier layer between the outermost layer and the substrate.

Priceman teaches a coated metal composite article, such as a gas turbine engine (column 3, lines 6-7), including afterburner nozzles thereof (column 1, line 46).

Opposite surfaces of the substrate have an intermetallic layer and ceramic layer thereon (column 4, lines 47-49; Figure 1) imparting "improved operating temperature and life capabilities at temperature and, where necessary, improved resistance to premature catastrophic failure resulting from chemical/metallurgical reactions with other materials" (column 2, lines 44-50). Therefore, as it is clearly taught by Priceman that forming a coating on either surface of the substrate provides improved life capabilities and resistance to failure, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to apply coatings to both surfaces of the substrate of Nagaraj et al. with a reasonable expectation of success. Thus the claimed invention as a whole is *prima facie* obvious over the combined teachings of the prior art.

Regarding claim 9, Nagaraj et al. use like materials in a like manner to that described by Applicant and it would therefore be expected that one surface for a component such as a nozzle insert will be wetted by a hydrocarbon fluid falling within the temperature range of about 105°C to about 345°C and an oppositely-disposed second surface is exposed to an environment at a temperature higher than that of the fluid. Likewise, the use of like materials in a like manner leaves it to be expected that the formation and adhesion of carbonaceous deposits on the surface will be inhibited.

Regarding claims 10-12, absent a showing of unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to deposit the layers with thicknesses claims since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art (*In re Aller*, 105 USPQ 233). Further, it would have been obvious to have selected the overlapping portion of the ranges disclosed by Nagaraj et al. because overlapping ranges have been held to be a *prima facie* case of obviousness (*In re Malagari*, 182 USPQ 549). The overlapping ranges for the barrier layer are considered all values up to about 25 micrometers and for the reflective layer all values up to 10 micrometers.

Regarding claim 16, Priceman teaches the single step of application of an intermetallic layer to both sides of the substrate prior to the subsequent step of heating of the coated substrate (column 5, lines 40-43). It would be obvious to one of ordinary skill in the art to apply the layer to both sides simultaneously. Thus the claimed invention as a whole is *prima facie* obvious over the combined teachings of the prior art.

Regarding claim 17, Nagaraj et al. do not teach the outermost layer as having a roughness but does teach a "sufficiently micro-smooth finish so as to maximize the reflectivity of the coating" (column 3, lines 63-64). Therefore, it is fully expected that the coating will have a roughness not greater than about one micrometer.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron S. Austin whose telephone number is (571) 272-8935. The examiner can normally be reached on Monday-Friday: 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ASA


JENNIFER MCNEIL
PRIMARY EXAMINER
12/30/05